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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID O. BEEN, MICHAEL BUSCH, OSAMU FURUSAWA, FREDERICK S. GRENNAN, FUMIHIKO TERUI, and JUSTO L. PEREZ[1]

Appeal 2016-003858
Application 12/719,548
Technology Center 2100

Before ALLEN R. MacDONALD, KEVIN C. TROCK, and PHILLIP A. BENNETT, *Administrative Patent Judges*.

BENNETT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–15, 26, and 27.[2] We have jurisdiction under 35 U.S.C. § 6(b).

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[1] Appellants' Brief (Br.) identifies the real party-in-interest as International Business Machines Corporation ("IBM"). Br. 3.

[2] Claims 16–23 are withdrawn from consideration, and not subject to appeal. Br. 5.

We REVERSE.

CLAIMED SUBJECT MATTER

The claims are directed to re-indexing metadata in order to change the indexing settings while maintaining availability to the existing metadata index. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A computer implemented method for dynamically re-indexing metadata associated with content in a plurality of documents, each of the documents having a unique document identifier, the method comprising:
>
> indexing the content of the plurality of documents to generate an inverted content index;
>
> indexing the metadata of the plurality of documents to generate a first metadata index, the first metadata index being an inverted index that is parallel with the content index;
>
> storing the metadata of the plurality of documents in a metadata store in native form and cross referenced with the unique document identifiers;
>
> re-indexing the metadata of the plurality of documents from the metadata store to generate a second metadata index separately and independently from the first metadata index while maintaining the first metadata index available for searching and separate from the second metadata index, the second metadata index being an inverted index that is parallel with the content index, wherein the re-indexing of the metadata results in different indexing settings for the second metadata index in relation to the first metadata index; and
>
> replacing the first metadata index with the second metadata index and discarding the first metadata index.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Hoernkvist	US 2008/0306949 A1	Dec. 11, 2008

Loofbourrow	US 2008/0307013 A1	Dec. 11, 2008
Renkes	US 7,836,037	Nov. 16, 2010

REJECTIONS

Claims 1–15 and 26–27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Loofbourrow, Renkes, and Hoernkvist. Final Act. 2–6.

ISSUE FOR DECISION

Has the Examiner erred in concluding the cited references teach, suggest, or otherwise render obvious:

> re-indexing the metadata of the plurality of documents from the metadata store to generate a second metadata index separately and independently from the first metadata index while maintaining the first metadata index available for searching and separate from the second metadata index, the second metadata index being an inverted index that is parallel with the content index, wherein the re-indexing of the metadata results in different indexing settings for the second metadata index in relation to the first metadata index,

as recited in independent claim 1, and recited similarly in independent claims 6 and 11?

OPINION

The Examiner's Findings and Conclusions

In rejecting claim 1, the Examiner finds the combined teachings of Loofbourrow, Renkes, and Hoernkvist render obvious the recited "re-indexing" step. More specifically, the Examiner finds Loofbourrow discloses the use of a delta postings lists for supplementing the existing

contents of an inverted index. Ans. 2. The Examiner further finds Renkes (col. 9, ll. 14–38) teaches "re-indexing the metadata of the plurality of documents from the metadata store to generate a second metadata index separately and independently from the first metadata index while maintaining the first metadata index available for searching and separate from the second metadata index." Ans. 2–4. In particular, the Examiner finds the cited passage in Renkes "discloses that a copy of an old index (i.e. a first metadata index) and an old delta index may be available for searching during a merge operation." Ans. 4. The Examiner notes that Loofbourrow and Renkes do not teach "wherein the re-indexing of the metadata results in different indexing settings for the second metadata index in relation to the first metadata index," and finds the two-level term table indices disclosed in Hoernkvist show different indexing settings for a second metadata index in relation to a first metadata index. Ans. 4–5.

Appellants' Contentions

Appellants contend the Examiner erred because the cited references each pertain to supplementing an existing index to reflect changes in underlying data, and not to creating a new index with different indexing parameters (i.e., a separate and independent index) as recited in the claims. Br. 12–17.

Appellants argue Loofbourrow is directed to supplementing an index when changes are made to underlying indexed data using delta posting lists. Br. 13. Thus, when underlying data changes, those changes are not immediately made to the main index, but instead are reflected in a delta postings list. When a query is run against an outdated index, the delta

postings are applied to the results to ensure the most recent changes are reflected in the query results. Br. 13–14.

Appellants also argue the teachings of Renkes are inapposite. Appellants assert Renkes describes the use of multiple delta indexes to accept updates which are eventually merged with a main index. Br. 15–16. According to Appellants, the portion of Renkes' description cited by the Examiner does not teach the claimed re-indexing because the main index 106 in Renkes is never replaced and deleted. Br. 15. Appellants submit it is only the delta indexes which are discarded in Renkes. Br. 15–16.

Appellants also challenge the Examiner's findings with respect to Hoernkvist. Br. 16. Appellants contend Hoernkvist describes only an inverted index that utilizes a 2-level term table and a posting tables to generate postings lists. *Id.* According to Appellants there is no suggestion or teaching in Hoernkvist of the recited re-indexing metadata to generate a second metadata index separately and independently from a first metadata index. *Id.*

Analysis

We are persuaded that the Examiner has erred in finding the combination of Loufburrow, Renkes, and Hoernkvist teaches "re-indexing the metadata . . . to generate a second metadata index separately and independently from the first metadata index while maintaining the first metadata index available for searching and separate from the second metadata index . . . wherein the re-indexing of the metadata results in different indexing settings" as recited in claim 1.

The cited references each address problems associated with updating an index to account for changes in the underlying data. That is, the changes

made to the indexes described in each of the cited references maintain the existing indexing settings, and do not replace an existing index with a new index having different index settings. They are not concerned with re-indexing the metadata to produce a new metadata index that replaces the existing index with different indexing settings. Constrained by the record before us, we must agree with Appellants that a prima facie case of obviousness has not been made out in the first instance by a preponderance of evidence. Accordingly, we do not sustain the rejection of claim 1 and claims 2–5 and 26–27 which depend therefrom. For the same reason, we also do not sustain the rejections of independent claims 6 and 11, and their respective dependent claims 7–10 and 12–15.

DECISION

The Examiner's rejection of claims 1–15 and 26–27 is reversed.

REVERSED